FIGURE NSH-017:1. Ambient Temperature and Fluid Electrical Conductivity; Gunnison Hydrology Study; Excelsior Mining; Arizona; Borehole: NSH-017.
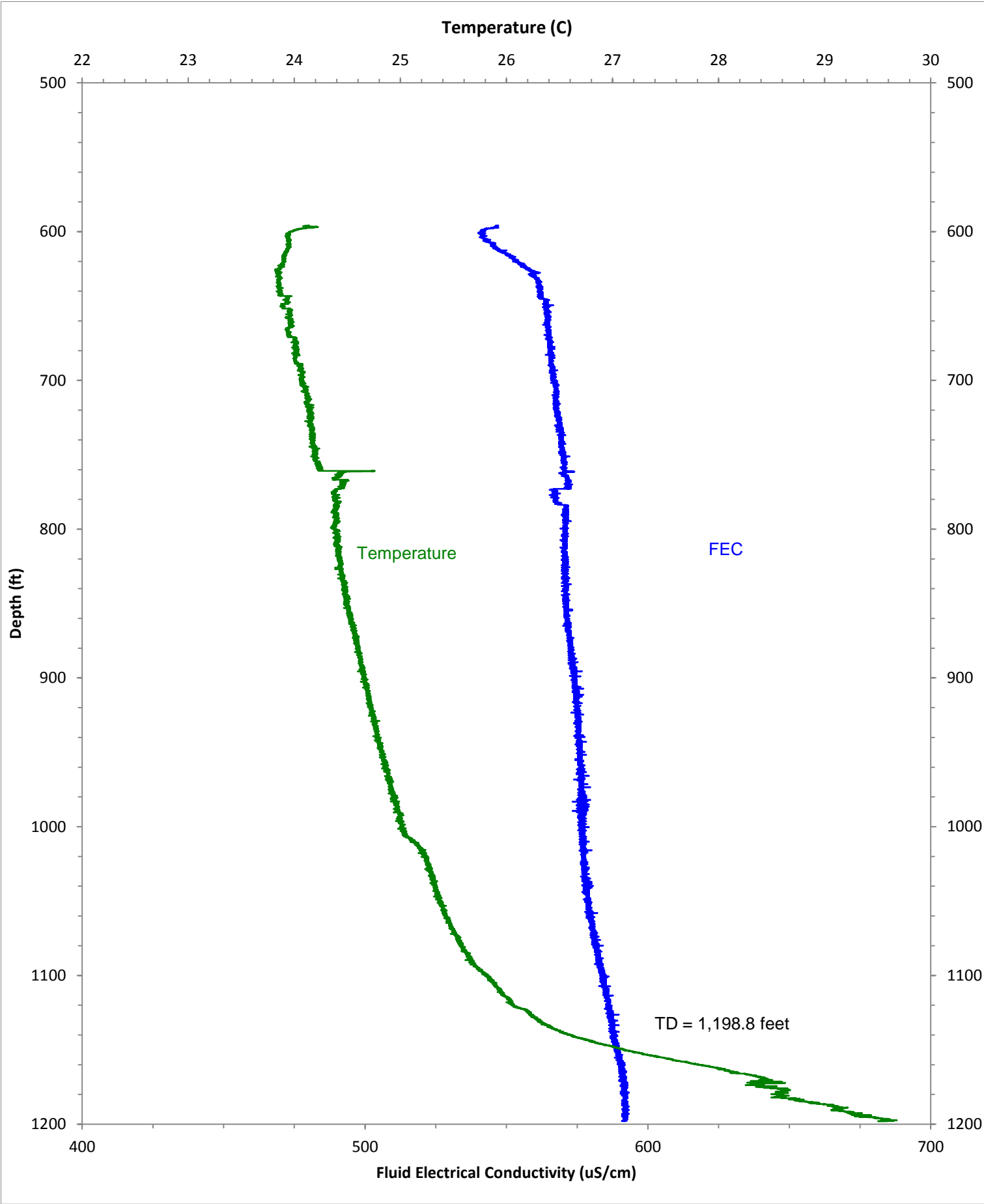
FIGURE NSH-019:2. Injection And Raised-Head Data During Spinner Flowmeter Injection Stress-Test at 80 GPM; Gunnison Hydrology Study; Excelsior Mining; Arizona; Borehole: NSH-019.
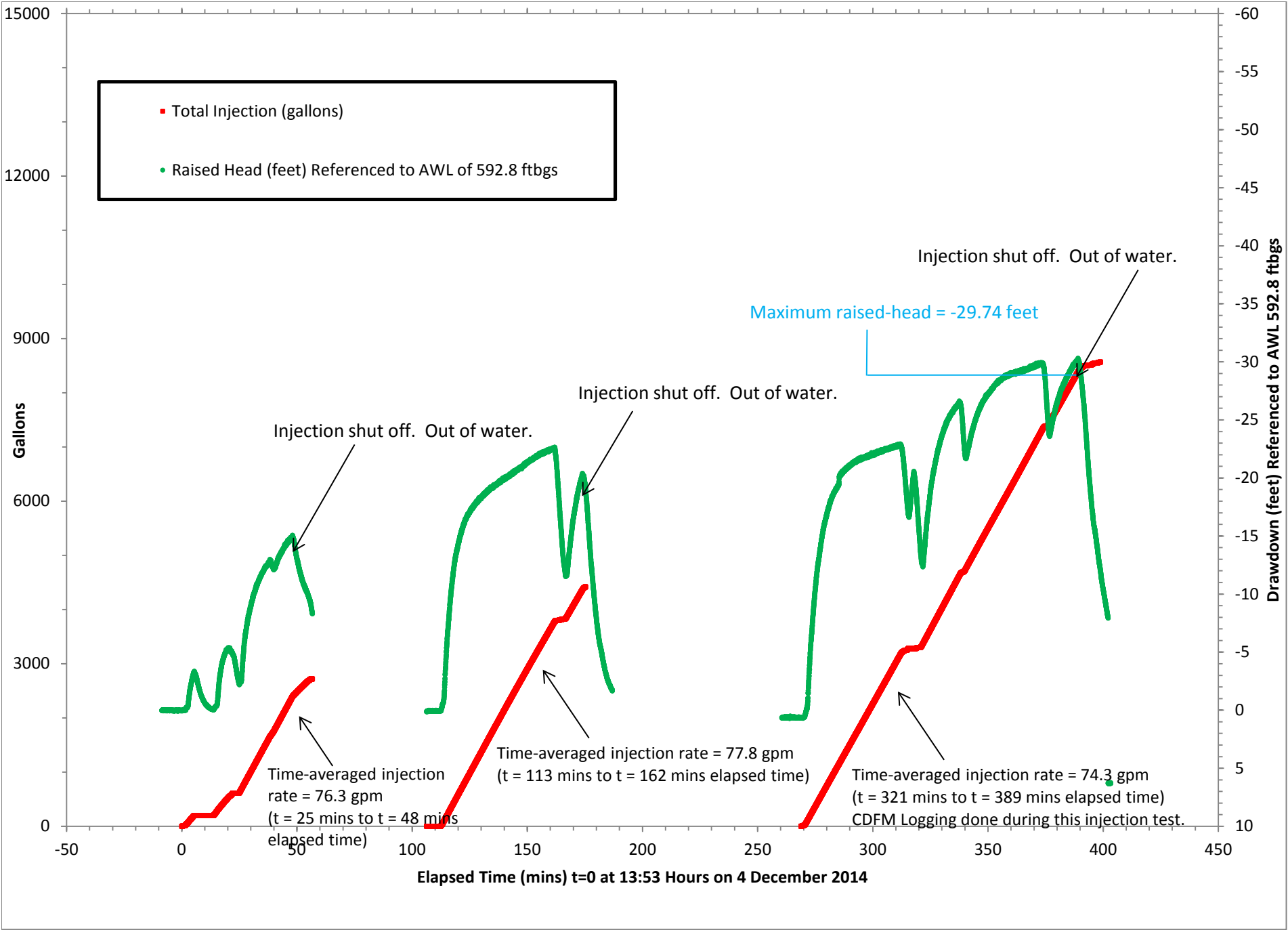
Table NSH-017:1. Summary of Corehole Dynamic Flowmeter Test-Station Results and Spinner Flowmeter Results; Gunnison Hydrology Study; Excelsior Mining; Arizona; Borehole: NSH-017.

Depth (feet)	Depth (meters)	Flow in Borehole During Ambient Testing (GPM)	Flow in Borehole During Injection Testing (GPM)	Percent Flow of Total Injection (%)	Comments
601.0	183.18	-0.01	-5.55	7.1	All flow measurements are from the CDFM unless otherwise specified.
618.0	188.37	-0.01	NA	NA	
628.0	191.41	-0.05	5.00	-6.4	Flow measurement during injection is from the spinner flowmeter at this depth. The CDFM likley had leakage by the diverter (-3.27 gpm)
650.0	198.12	-0.05	NA	NA	
673.0	205.13	-0.08	-4.30	5.5	
689.0	210.01	-0.03	NA	NA	
710.0	216.41	-0.02	NA	NA	
740.0	225.55	-0.07	-3.42	4.4	
751.0	228.90	-0.04	-2.97	3.8	Due to water running out, and a flow value of -3.42 gpm at 846 feet, the tests at 751 and 766 are assumed to be -3.42 gpm.
766.0	233.48	-0.02	-3.09	4.0	Ran out of water. Switching to new water source for test-stations below 766 feet.
790.0	240.79	-0.02	NA	NA	
820.0	249.94	-0.02	NA	NA	
846.0	257.86	-0.02	-3.42	4.4	
896.0	273.10	-0.03	NA	NA	
940.0	286.51	-0.03	-3.50	4.5	
970.0	295.66	-0.02	NA	NA	
988.0	301.14	0.01	-3.43	4.4	
1015.0	309.37	0.05	NA	NA	
1059.0	322.78	0.09	-3.55	4.6	
1080.0	329.18	0.09	NA	NA	
1105.0	336.80	0.05	-3.23	4.2	
1118.0	340.77	0.02	NA	NA	
1125.0	342.90	0.04	-1.69	2.2	
1160.0	353.57	0.02	-0.85	1.1	
1186.0	361.49	0.03	-0.42	0.5	

Note: Positive flow values represent upflow in the borehole, negative valus represent downflow.

NA = Not Applicable. No test station was taken at that depth under the respective test condition.

Ambient water level (AWL) was recorded at 592.8 ftbgs on December 4, 2014 before Ambient Testing was initiated.

Table NSH-017:2. Summary of Corehole Dynamic Flow Meter Results With Hydraulic Conductivity, Transmissivity and Head Estimations; Gunnison Hydrology Study; Excelsior Mining; Arizona; Borehole: NSH-017.

Well Name	NSH-017
Ambient Depth to Water (ftbtoc)	NA
Ambient Depth to Water (ftbgs)	609.00

Diameter of Borehole (ft)	0.96
Maximum Raised Head (ft)	29.74
Effective Radius (ft)	100

Interpretation of Corehole Dynamic Flowmeter Logging Results: NSH-017									
Interval No.	Top of Interval (ft)	Bottom of Interval (ft)	Length of Interval (ft)	Ambient Flow[1] (gpm)	Darcy Velocity in Aquifer[2] (ft/day)	Interval-Specific Flow Rate During Injection (gpm)	Interval-Specific Hydraulic Conductivity[3] (ft/day)	Transmissivity (ft^2/day)	Interval-Specific Depth to Water - Vertical (ftbgs)
1*	Above 601	601.0	NA	0.01	NA	NA	NA	NA	NA
2	618.0	628.0	10.0	0.04	NA	-0.55	3.25E-01	3.25E+00	NA
3	650.0	673.0	23.0	0.03	NA	-0.70	1.75E-01	4.02E+00	NA
4	673.0	689.0	16.0	-0.05	NA	NA	NA	NA	NA
5	710.0	740.0	30.0	0.04	NA	-0.88	1.69E-01	5.06E+00	NA
6	740.0	751.0	11.0	-0.03	NA	0.00	NA	NA	NA
7	751.0	766.0	15.0	-0.02	NA	0.00	NA	NA	NA
8	846.0	896.0	50.0	0.01	NA	0.00	NA	NA	NA
9	940.0	970.0	30.0	-0.01	NA	0.00	NA	NA	NA
10	970.0	988.0	18.0	-0.03	NA	0.00	NA	NA	NA
11	988.0	1015.0	27.0	-0.04	NA	0.00	NA	NA	NA
12	1015.0	1059.0	44.0	-0.04	NA	0.00	NA	NA	NA
13	1080.0	1105.0	25.0	0.04	NA	-0.19	5.06E-02	1.27E+00	NA
14	1105.0	1118.0	13.0	0.02	NA	-1.54	6.60E-01	8.59E+00	NA
15	1125.0	1160.0	35.0	0.00	NA	-0.84	1.32E-01	4.62E+00	NA
16	1160.0	1186.0	12.8	0.00	NA	-0.43	1.85E-01	2.37E+00	NA
17	1186.0	1198.8	12.8	0.03	NA	-0.4	1.93E-01	2.48E+00	NA

Note: Negative flow is outflow from the borehole to the aquifer, positive flow is inflow to the borehole.

[1] Downward and upward ambient vertical flow is identified in this borehole under ambient conditions.

[2] Darcy Velocity, or Specific Discharge in aquifer, is calculated using the observed volumetric flow rate, the cross-sectional area of the flow interval in the wellbore and a wellbore convergence factor of 2.5 (Drost, 1968). The Darcy Velocity is only applicable to ambient horizontal flow.

[3] Hydraulic conductivity and transmissivity estimates are based on single well drawdown data, a porous-medium equivalent model and Hvorslev's 1951 porosity equation

NA = Not Applicable